Exhibit A

SECTION A – HUMAN NECESSITIES

A 01 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING

A 01 N PRESERVATION OF BODIES OF HUMANS OR ANIMALS OR PLANTS OR PARTS THEREOF; BIOCIDES, e.g. AS DISINFECTANTS, AS PESTICIDES, AS HERBICIDES

(preparations for medical, dental, or toilet purposes A61K; methods or apparatus for disinfection or sterilisation in general, or for deodorisation of air A61L); **PEST REPELLANTS OR ATTRACTANTS** (decoys A01M 31/06; medicinal preparations A61K); **PLANT GROWTH REGULATORS** (compounds in general C01, C07, C08; fertilisers C05; soil conditioners or stabilisers C09K 17/00)

Notes

(1) This subclass covers: **[3]**
- *compositions, physical forms, methods of application of specific materials or the use of single compounds or compositions;* **[7]**
- *chemosterilants for the sexual sterilisation of invertebrates, e.g. insects (sex sterilants for other purposes A61K).* **[7]**

(2) This subclass does not cover materials which affect the growth of a plant solely by supplying nutrients, i.e. plant food, ordinarily required for growth or materials which are used to prevent or cure mineral deficiencies in plants, e.g. addition of iron chelates to cure iron chlorosis, which materials are covered by class C05. **[3]**

(3) In this subclass, the following expression is used with the meaning indicated:
- "plant growth regulators" are those materials which alter the plant through a chemical modification of the plant metabolism, such as auxins. **[3]**

Subclass Index

PRESERVATION OF CORPSES OF HUMANS OR ANIMALS, OR OF PLANTS	A01N 1/00, A01N 3/00
BIOCIDES, PEST REPELLANTS OR ATTRACTANTS, PLANT GROWTH REGULATORS	
Physical form or method of application	A01N 25/00
containing organic compounds	A01N 27/00 to A01N 57/00, A01N 61/00
containing inorganic compounds	A01N 59/00
containing micro-organisms, enzymes, extracts of animals or plants	A01N 63/00, A01N 65/00

Preservation of bodies of humans or animals, or plants, or parts thereof

1/00 **Preservation of bodies of humans or animals, or parts thereof** (preservation of foodstuffs A23; medicinal preparations containing materials from mammals or birds, e.g. blood, sperm, A61K 35/12; cell or tissue culture C12N 5/00)

1/02 . Preservation of living parts

3/00 **Preservation of plants or parts thereof, e.g. inhibiting evaporation, improvement of the appearance of leaves** (preservation of foodstuffs A23; preservation or chemical ripening of fruit or vegetables A23B 7/00); **Grafting wax**

3/02 . Keeping cut flowers fresh chemically (apparatus therefor A01G 5/06)
3/04 . Grafting wax

Biocides; Pest repellants or attractants; Plant growth regulators [3]

Notes

(1) Attention is drawn to the definitions of groups of chemical elements following the title of section C. **[3]**
(2) In groups A01N 27/00 to A01N 65/00, in the absence of an indication to the contrary, classification is made in the last appropriate place for an active ingredient. **[3]**
(3) Where a compound is described as existing in tautomeric forms, it is classified as if existing in the form which is classified last in the system. **[3]**
(4) Compounds covered by different main groups according to alternatively specified parts of their formulae are classified in every one of the relevant main groups. **[3]**
(5) Salts formed between two or more organic compounds are classified as the compound providing the essential ion and it is also classified as the compound providing the other ion. **[3]**
(6) Salts or metal chelates of an organic compound are classified as that compound. **[3]**
(7) In this subclass, a foodstuff is not considered as an active ingredient. **[3]**
(8) Different materials applied in sequence, at different times, are considered as a mixture of all materials employed. **[3]**
(9) Synergistic or potentiated compositions are classified as if the synergist or potentiator were an active ingredient. **[3]**
(10) In groups A01N 25/00 to A01N 65/00, it is desirable to add the indexing codes relating to individual components of a composition. The indexing codes, which are chosen from the said groups, have the same numbers as the classification symbols, but a colon is used instead of the oblique stroke, and should be linked. **[4]**
Attention is drawn to Chapter IV of the Guide which sets forth the rules concerning the application and presentation of the different types of indexing code.
(11) In groups A01N 25/00 to A01N 65/00, the symbol X means nitrogen, oxygen, sulfur or a halogen; Y means nitrogen, oxygen or sulfur. A dotted line between atoms indicates an optional bond, e.g. ... indicates one or two single bonds or a double bond. **[3]**

25/00 Biocides, pest repellants or attractants, or plant growth regulators, characterised by their forms, or by their non-active ingredients or by their methods of application (apparatus for the destruction of noxious animals or noxious plants A01M; fungicidal, bactericidal, insecticidal, disinfecting or antiseptic paper D21H); **Substances for reducing the noxious effect of the active ingredients to organisms other than pests [3]**
25/02 . containing liquids as carriers, diluents or solvents **[3]**
25/04 . . Dispersions or gels (foams A01N 25/16) **[3]**
25/06 . . . Aerosols **[3]**
25/08 . containing solids as carriers or diluents **[3]**
25/10 . . Macromolecular compounds **[3]**
25/12 . Powders or granules (A01N 25/26 takes precedence) **[3]**
25/14 . . wettable **[3]**
25/16 . Foams **[3]**
25/18 . Vapour or smoke emitting compositions with delayed or sustained release (fumigators A01M 13/00) **[3]**
25/20 . Combustible or heat-generating compositions **[3]**
25/22 . containing ingredients stabilising the active ingredients **[3]**
25/24 . containing ingredients to enhance the sticking of the active ingredients **[3]**
25/26 . in coated particulate form **[3]**
25/28 . . Microcapsules **[3]**
25/30 . characterised by the surfactants **[3]**
25/32 . Ingredients for reducing the noxious effect of the active substances to organisms other than pests, e.g. toxicity reducing compositions, self-destructing compositions **[3]**
25/34 . Shaped forms, e.g. sheets, not provided for in any other group of this main group **[3]**

27/00 Biocides, pest repellants or attractants, or plant growth regulators containing hydrocarbons [3]

29/00 Biocides, pest repellants or attractants, or plant growth regulators containing halogenated hydrocarbons [3]
29/02 . Acyclic compounds or compounds containing halogen attached to an aliphatic side chain of a cycloaliphatic ring system **[3]**
29/04 . Halogen directly attached to a carbocyclic ring system **[3]**

Exhibit B

USPTO Patent Full-Text and Image Database

Searching US Patent Collection...

Results of Search in US Patent Collection db for:
("dotted line" AND "optional bond"): 263 patents.
*Hits **1** through **50** out of **263***

Next 50 Hits

Jump To

Refine Search "dotted line" and "optional bond"

	PAT. NO.	Title
1	7,329,687	Flavanoid compounds as chemotherapeutic, chemopreventive, and antiangiogenic agents
2	7,321,001	Asthma and allergic inflammation modulators
3	7,271,175	17.beta.-hydroxysteroid dehydrogenase type 3 inhibitors for the treatment of androgen dependent diseases
4	7,253,183	Method of use of (imidazol-5-yl)methyl-2-quinolinone derivatives to inhibit smooth muscle cell proliferation
5	7,244,727	Fused bicyclic nitrogen-containing heterocycles
6	7,223,765	4-phenyl-1-piperazinyl, -piperidinyl and -tetrahydropyridyl derivatives
7	7,214,716	Agonists specific for the peripheral cannabinoid receptor
8	7,153,958	Farnesyl transferase inhibiting benzoheterocyclic derivatives
9	7,148,238	Phenyl-piperazine derivatives as serotonin reuptake inhibitors
10	7,144,884	Phenyl-piperazine derivatives as serotonin reuptake inhibitors
11	7,138,407	Phenyl-piperazine derivatives as serotonin reuptake inhibitors
12	7,115,651	Macrocycles and uses thereof
13	7,112,592	Azabicyclic compounds, preparation thereof and use as medicines, in particular as antibacterial agents
14	7,074,796	4-phenyl-1-piperazinyl, -piperidinyl and -tetrahydropyridyl derivatives
15	7,067,501	Aryloxyphenyl and arylsulfanylphenyl derivatives

16 7,053,091 17 .beta.-hydroxysteroid dehydrogenase type 3 inhibitors for the treatment of androgen dependent diseases
17 7,019,139 Quinolinones and uses thereof
18 6,974,813 N-[(substituted five-membered di-or triaza diunsaturated ring) carbonyl] guanidine derivatives for the treatment of ischemia
19 6,903,137 Agonists specific for the peripheral cannabinoid receptor
20 6,867,184 Methods of treating diabetic cardiomyopathy using glycogen phosphorylase inhibitors
21 6,864,291 Agonists specific for the peripheral cannabinoid receptor
22 6,846,820 Substituted N-(indole-2-carbonyl) -amides and derivatives as glycogen phosphorylase inhibitors
23 6,838,467 Dosing regimen
24 6,803,457 Compounds for the treatment of ischemia
25 6,800,636 Farnesyl protein transferase inhibitors
26 6,777,415 Methods of inducing cancer cell death and tumor regression
27 6,743,808 4-aryl-1-(indanmethyl, dihydrobenzofuranmethyl or dihydrobenzothiophenemethyl) tetrahydropyridines or piperazines
28 6,743,805 Method of use of (imidazol-5-yl)methyl-2-quinolinone derivatives to inhibit smooth muscle cell proliferation
29 6,740,661 Farnesyl protein transferase inhibitors
30 6,734,194 Method of use of (imidazol-5-yl)methyl-2-quinolinone derivatives to inhibit smooth muscle cell proliferation
31 6,727,263 Indole and 2,3-dihydroindole derivatives, their preparation and use
32 6,713,462 Quinolinones and uses thereof
33 6,703,400 Methods for treating multidrug resistance
34 6,699,864 Substituted phenyl-piperazine derivatives, their preparation and use
35 6,649,634 Substituted N-(indole-2-carbonyl-) amides and derivatives as glycogen phosphorylase inhibitors
36 6,645,973 Spiro(2h-1-benzopyran-2,4-piperidine)derivatives as glycine transport inhibitors
37 6,596,722 Piperidine, tetrahydropyridine and piperazine derivatives, their preparation and use
38 6,576,639 Compounds for the inhibition of farnesyl protein transferase
39 6,555,569 Use of heteroaryl substituted N-(indole-2-carbonyl-) amides for treatment of infection
40 6,552,044 Indane or dihydroindole derivatives
41 6,552,011 (Androst-5-en-17beta -yl)alkyl sulfoxides and sulfones and their use for control of fertility
42 6,545,020 Farnesyl Protein transferase inhibitors with in vivo radiosensitizing properties
43 6,544,979 Fused imidazole derivatives for improving oral bioavailability of pharmaceutical agents
44 6,514,997 Antipicornaviral compounds and compositions, their pharmaceutical uses, and materials for their synthesis
45 6,514,993 Serotonin 5-HT1A and dopamin D2 receptor ligands

46 6,511,993 T Metalloprotease inhibitors
47 6,498,163 T Pyrido[2,3-D]pyrimidines and 4-aminopyrimidines as inhibitors of cellular proliferation
48 6,492,401 T N-[(substituted five-membered di- or triaza diunsaturated ring)carbonyl] guanidine derivatives for the treatment of ischemia
49 6,489,486 T 2-hydroxyphenyl benzotriazoles as UV-A/B filters
50 6,476,035 T Indole and 2,3-dihydroindole derivatives, their preparation and use

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Basic Terminology of Stereochemistry
(IUPAC Recommendations 1996)

Exhibit C

Introduction

Contents

Synopsis.

This is a glossary of the more important, and most widely-used, stereochemical terms. It extends the list of those defined in the IUPAC Nomenclature of Organic Chemistry, Section E: Stereochemistry (Recommendations 1974) [1] and includes some terms from the Glossary of Terms used in Physical Organic Chemistry (Recommendations 1994).[4]. Additional terms have been added from inorganic and macromolecular chemistry. Some misleading terms are included together with guidance on correct usage or acceptable alternatives.

Many of the symbols used in stereochemical nomenclature are mentioned but details of their assignment or their incorporation into chemical names are left to the appropriate recommendations. Terminology related to techniques used in the determination of stereochemistry are largely excluded as well as terms used to describe reaction mechanisms.

Introduction

When the IUPAC Commission on Nomenclature of Organic Chemistry prepared section E: Stereochemistry (Recommendations 1974) [1] the document was primarily intended to describe the naming of stereochemical features as part of the overall nomenclature of organic compounds.[2] In the absence of any IUPAC recommendations on stereochemical terminology Section E included appropriate aspects of the vocabulary of the subject. In 1983 the Commission on Physical Organic Chemistry published a Glossary of terms used in that field [4]. In view of the previous publication of section E stereochemical terms were excluded from this Glossary. However it became apparent that a separate glossary of stereochemical terms would facilitate the work of both commissions and accordingly a joint working party was established with additional representation from the Commission on Nomenclature of Inorganic Chemistry and the Commission on Macromolecular Nomenclature.

The working party considered a very long list of possible terms for inclusion but decided to initially concentrate on those terms which were essential for the work of the commissions and any others which were very widely used, or misused. In the latter case, as well as condemnation of inappropriate terms, guidance on the correct usage, or acceptable alternatives were to be provided. The preparation of a more comprehensive Glossary of Stereochemical Terms was left to a possible second edition, or possibly in a combined glossary with other physical organic chemistry terms.

Many of the symbols used in stereochemical nomenclature are mentioned in this document but it is not intended to provide details of their assignment or how they are incorporated into chemical names.

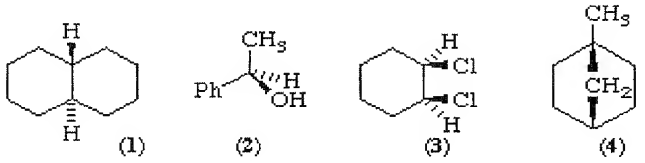
Interested readers are referred in the text to the original published papers and some details are given in the appropriate IUPAC recommendations on organic [2], inorganic [5], and macromolecular [6] chemical nomenclature.

Terminology which relates to techniques used in the determination of stereochemistry [7] is also largely excluded. Some stereochemical terms used to describe reaction mechanisms are already included in the Glossary of Physical Organic Chemistry [4].

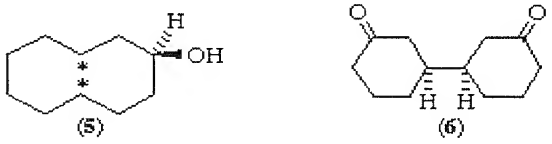
Graphic Representation of Three-Dimensional Structures [8]

Structural diagrams which depict stereochemistry must be prepared with extra care to ensure there is no ambiguity. In general plain lines depict bonds approximately in the plane of the drawing; bonds to atoms above the plane are shown with a bold wedge ▬◀ (starting from an atom in the plane of the drawing at the narrow end of the wedge); and bonds to atoms below the plane are shown with short parallel lines ||||||||. As an alternative a bold bond ▬ may be used instead of a bold wedge. A broken line ---- has been used instead of parallel lines but this is better reserved for a partial bond, delocalisation, or a hydrogen bond. The use of a wedge of parallel lines ▷|||| is not recommended as it is ambiguous. It is used commonly in two directly opposite ways. Different workers define the narrow end as being in the plane of the drawing or furthest from the viewer. If stereochemistry is unknown this can be indicated explicitly by a wavy line ∿∿∿ . The use of dots or open circles at a centre to show stereochemistry is strongly deprecated. Other specific conventions mentioned in the Glossary include Fischer projection, Newman projection, sawhorse projection and wedge projection.

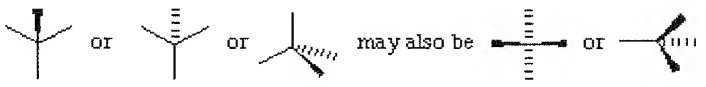
Strict rules for drawing stereochemistry are not possible. In general it is most clear if all rings of an *ortho*- fused ring system (or saturated derivatives) are kept in the plane of the drawing and bridgehead substituents are shown above or below the plane (**1**). With an acyclic structure (**2**) or other substituents on a ring (**3**) [including bridges (**4**)] bonds are shown as above or below the plane. Hydrogen atoms attached at stereochemically designated positions should not be omitted (**3**).



The stereochemistry due to substituents attached to a ring should not be shown at a re-entrant angle [marked with an asterisk on (**5**); although this is suitable for a carbonyl or *N*-methyl]. Any bond between two stereochemically designated positions should be left plain (**6**).

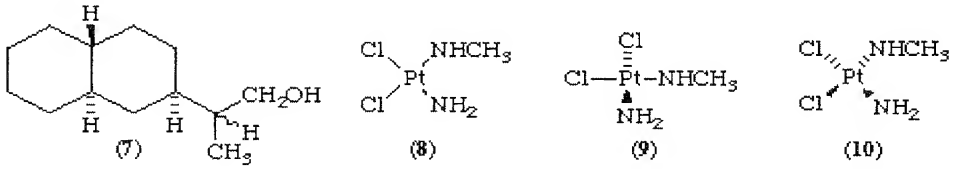


With tetrahedral stereochemistry the following are recommended:

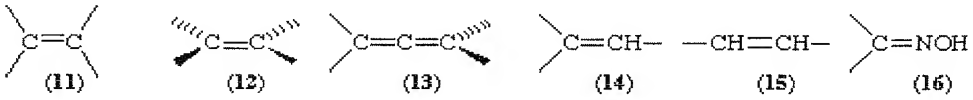


A wavy line can be used to indicate either that the stereochemistry is unknown (**7**), but only one form

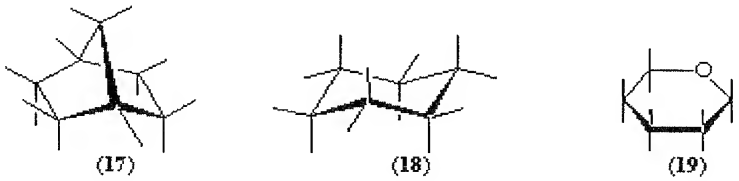
is present, or, if explained in the text, that both isomers are present and will be defined when required. If it is intended not to show any stereochemistry it is best to only use plain lines for all bonds. Note that the square planar molecule (**8**) may also be drawn as (**9**) or (**10**).



Double bonds should be shown [(**11**), (**12**) and (**13**)] as far as possible with accurate angles (*ca.* 120°) if stereochemistry is implied. To show the absence of stereochemical information a linear representation should be used [(**14**), (**15**) and (**16**)].



In a perspective drawing it is preferable to indicate which edge of a ring is considered in front by bold or wedge lines [(**17**), (**18**) and (**19**)]; and "breaking" the bond at the back when a bond passes in front [(**17**) and (**18**)]. In this type of stereochemical representation bonds to substituents should usually be left plain.



References

1. IUPAC, Commission on Nomenclature of Organic Chemistry, Section E: Stereochemistry (Recommendations 1974), *Pure Appl. Chem.* **45**, 11-30 (1976), see also [2], [3].

2. IUPAC, Commission on Nomenclature of Organic Chemistry, *Nomenclature of Organic Chemistry, Sections A, B, C, D, E, F and H*, 1979, Pergamon Press, pp. 473-490; see also IUPAC, Commission on the Nomenclature of Organic Chemistry, A Guide to IUPAC Nomenclature of Organic Chemistry, 1993, Blackwell Scientific Publications, pp. 149-154.

3. International Union of Biochemistry and Molecular Biology, *Biochemical Nomenclature and Related Documents*, 2nd edition, 1992, Portland Press, pp.1-18.

4. IUPAC, Commission on Physical Organic Chemistry, Glossary of Terms Used in Physical Organic Chemistry, (Recommendations 1994) *Pure Appl. Chem.*, **66**, 1077-1184 (1994).

5. IUPAC, Commission on Nomenclature of Inorganic Chemistry, *Nomenclature of Inorganic Chemistry (Recommendations 1990)*, 3rd edition, 1990, Blackwell Scientific Publications, pp. 159-189.

6. IUPAC, Commission on Macromolecular Nomenclature, *Compendium of Macromolecular Nomenclature*, 1991, Blackwell Scientific Publications, pp. 25-46.

7. IUPAC, Analytical Chemistry Division, *Compendium of Analytical Nomenclature*, 2nd edition, 1987, Blackwell Scientific Publications; IUPAC, *Compendium of Chemical Terminology (IUPAC Recommendations)*, 1987, Blackwell Scientific Publications.

8. K.L. Loening, in *Chemical Structures* edited W.A. Warr, 1988, Springer Verlag, pp. 413-423.

Continue with terms starting with A.

Return to home page for Basic Terminology of Stereochemistry.